

LAKE WHATCOM LANDSCAPE PLAN
Objectives and Alternatives Matrix (Final, 4-19-02)

	Alternative 1 = Black Text Alternative 2 = Black + <i>Red Text</i> (Modeling Scenario A)	Alternative 3 (Modeling Scenario B)	Alternative 4 (Modeling Scenario C)	Alternative 5 (Restoration Only)
OBJECTIVE 1	Ensure no significant risk to public, health, safety and resources, and tribal archaeological and cultural resources from forest management related mass wasting events.			
	1.1: Follow Lake Whatcom Watershed Analysis mass-wasting prescriptions relating to timber harvesting.	<u>140’ edge buffer adjacent to Watershed Analysis ARS’s #1, 2, 3 and 4.</u> <u>20% removal on outer 50’</u>	<u>200’ edge buffer adjacent to Watershed Analysis ARS’s #1, 2, 3 and 4. No harvest.</u>	a) Full retention on all unstable slopes.
	<i>1.2: Harvest and road construction upon potentially unstable slopes (see Potentially Unstable Slopes on Map G-2) shall be carefully regulated. Proposed activities shall be reviewed by the inter-jurisdictional committee who may make site specific recommendations: 1.2.1 Proposed activities on potentially unstable slopes will require on-site evaluation by a DNR specialist. 1.2.2 No road construction or harvesting on areas identified during the above evaluation as unstable. 1.2.3 Harvesting or road construction outside of unstable areas will consider inter-jurisdictional committee and specialists recommendations.</i>	a) <u>140’ edge buffer adjacent to unstable slopes. 20% removal on outer 50’</u> b) >50% retention on potentially unstable slopes. c) Almost no roads on potentially unstable slopes.	a) <u>200’ edge buffer adjacent to unstable slopes.</u> b) Full retention on potentially unstable slopes. c) <u>No roads on potentially unstable slopes</u>	a) Full retention on all potentially unstable slopes. b) No new roads. c) No road reconstruction on potentially unstable slopes. d) Abandon moderate- to high-risk roads on potentially unstable slopes.

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	<p><i>1.3: On unstable slopes (see High Hazard Mass Wasting Units on Map G-1), new road construction shall be prohibited and old road reconstruction shall be limited. Proposed activities shall be reviewed by the inter-jurisdictional committee who may make site specific recommendations:</i></p> <p><i>1.3.1 No new road construction in Watershed Analysis ARS #2, 3 or 4. Follow Watershed Analysis prescription for road construction in ARS #1.</i></p> <p><i>1.3.2 Existing road reconstruction will follow Watershed Analysis road construction prescriptions in ARS #1, 2, 3 and 4.</i></p>	<p>a) No new road construction on unstable slopes.</p> <p>b) Almost no road reconstruction on unstable slopes.</p>	<p>a)</p> <p>b) No road reconstruction on unstable slopes.</p>	<p>a) No new roads.</p> <p>b) No road reconstruction on unstable slopes.</p> <p>c) Abandon moderate- and high-risk roads on unstable slopes.</p>
	<p>1.4: Proposed activities on potentially unstable slopes outside of the above Watershed Analysis mass-wasting units will require on-site evaluation by a DNR specialist. <i>Proposed activities shall be reviewed by the inter-jurisdictional committee who may make site specific recommendations:</i></p> <p><i>1.4.1 No road construction will occur on areas identified by the above evaluation as unstable.</i></p> <p>1.4.2 Road reconstruction on areas identified by the above evaluation as unstable will consider <i>inter-jurisdictional committee and specialists’</i> recommendations.</p>			<p>a) Full retention on all unstable slopes.</p> <p>b) No new roads.</p> <p>c) No road reconstruction on unstable slopes.</p> <p>d) Abandon moderate- and high-risk roads on unstable slopes.</p>
	<p>1.5: In Smith Creek, large woody debris, which increases the risk of log jams and resulting debris torrents, will be cut into chunks to reduce debris build up, to provide for public safety of downstream residents.</p>			

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OBJECTIVE 2	Maintain and restore the sediment regime within the range of natural variability.			
	2.1: Follow Forest Practice Rules and watershed analysis prescriptions for road construction and maintenance. 2.1.1 No road construction during “wet” conditions (typically Nov. 1-March 31) unless the contractor can demonstrate that protection of resources can be provided.	a) Stream crossing of Type 1-4 streams by concurrence with inter-jurisdictional committee.	a) Stream crossing of all stream types by concurrence with inter-jurisdictional committee. b) Pave 200’ approaches to existing stream crossings. c) Bridges only on new or replaced stream crossings of Type 1-4 streams d) No construction October 15 – July 1	Follow Forest Practice Rules for road maintenance. No new roads.
	2.2: Minimize new road construction using harvest systems planning.			No new road construction. Old road re-construction for restoration practices.
	2.3: No hauling during “wet” conditions” (typically Nov 1 – March 31) on roads with no surfacing or surfaced with non-durable rock, where sediment has the potential to deliver to streams.		No hauling on roads with no surfacing or surfaced with non-durable rock, where sediment has the potential to deliver to streams.	No hauling during “wet” conditions” (typically Nov.1 – March 31).
	2.4: Develop and begin implementation of a road maintenance and abandonment plan based on the specifications in WAC-222-24-50, within one year of the completion and approval of the landscape plan. 2.4.1 All orphaned roads will be inventoried and assessed. Mitigation work on orphaned roads will be done where a clear risk to public safety or potential for resource damage exists and accessing the site will not cause greater resource damage or public risk.	Treat (abandon and/or reduce to low risk) all high hazard, to public safety and resource damage, roads and orphaned roads within 3 years of approval of the landscape plan.	Treat (abandon and/or reduce to low risk) all high hazard, to public safety and resource, damaged roads and orphaned roads within 2 years of approval of the landscape plan.	
OBJECTIVE 3	Protect and restore riparian and wetland habitat to sustain healthy native aquatic, wetland, and riparian ecosystems.			

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	<p>3.1: Establish riparian management zones <i>along all streams</i>. Manage lands within such zones to protect water quality and riparian habitat. <i>Proposed activities shall be reviewed by the inter-jurisdictional committee who may make site specific recommendations:</i></p> <p>3.1.1 Type 1, 2, and 3 waters shall have a designated riparian management zone with a minimum horizontal width (each side) equal to the 100 year site potential tree height or 100 feet, whichever is greater; timber harvest allowed per HCP and forestry handbook procedures.</p> <p>3.1.2 Type 4 waters shall have a designated riparian management zone with a minimum horizontal width (each side) of 100 feet; timber harvest allowed per HCP and forestry handbook procedures.</p> <p><i>3.1.3 Type 5 waters shall have a designated riparian management zone with a minimum horizontal width (each side) of 33 feet.</i></p> <p><i>3.1.4 No timber harvests shall occur in type 5 riparian management zones except as needed for roads and yarding corridors. Trees cut for yarding corridors through type 5 riparian management zones shall be retained as down wood.</i></p> <p>3.1.5 Riparian management zone distance measured horizontally from the outer edge of the 100-year flood plain.</p> <p>3.1.6 The riparian management zone shall be increased to include an outer wind buffer, consistent with the HCP, on Type 1, 2, & 3 waters in areas prone to windthrow. Where necessary, the wind buffers shall be 100 feet wide on Type 1 & 2 waters and 50 feet wide on Type 3 waters wider than 5 feet.</p>	<p><u>Riparian Buffers</u></p> <p><u>Type 1 – 250’</u></p> <p><u>Type 2 – 250’</u></p> <p><u>Type 3 – 200’</u></p> <p><u>Type 4 – 150’</u></p> <p><u>Type 5 – 150’</u></p> <p><u>No harvest except for roads and yarding corridors</u></p> <p><u>Riparian Wind Buffers</u></p> <p><u>140’ where necessary (assume 1 side of all streams, for modeling)</u></p> <p><u>20% harvest allowed in the outer 50’ of wind buffer</u></p>	<p><u>Riparian Buffers</u></p> <p><u>Type 1 – 250’</u></p> <p><u>Type 2 – 250’</u></p> <p><u>Type 3 – 250’</u></p> <p><u>Type 4 – 250’</u></p> <p><u>Type 5 – 150’</u></p> <p><u>No harvest except for roads</u></p> <p><u>Riparian Wind Buffers</u></p> <p><u>140’ on each side of all streams</u></p> <p><u>No harvest in the wind buffer</u></p>	<p>No harvest except for road maintenance or re-construction.</p> <p>Pre-commercial thinning only in stands <30 years old.</p> <p>N/A</p> <p>N/A</p>
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	YARDING CORRIDORS	<5% of stream length. Full suspension.	<2% of stream length. Full suspension.	
	3.2: Provide forested buffers on wetlands consistent with HCP riparian management strategy. 3.2.1 For wetlands greater than 1 acre in size, provide a buffer equal in width to the 100 year site potential tree height or 100 feet, whichever is greater 3.2.2 For wetlands greater than 0.25 acre and less than one acre, provide a 100’ buffer. 3.2.3 Ensure timber harvest in forested portion of wetlands and buffers perpetuate a windfirm stand with a minimum basal area of 120 square feet per acre	<u>Wetlands and Buffers SPTH₂₀₀ (Site Potential Tree Height of a tree at age 200) buffer on all wetlands over 1/4 acre</u> <u>No harvest in wetland, Inner 50% of buffer: No harvest Outer 50% of buffer: 20% removal</u> For wetlands <1/4 acre, clump leave trees in wetland.	<u>Wetlands and Buffers SPTH₂₀₀ on all wetlands over ¼ acre</u> <u>No harvest in wetland or buffer</u> For wetlands <1/4 acre, clump leave trees in wetland.	Wetlands and Buffers SPTH ₂₀₀ on all wetlands. N/A
OBJECTIVE 4	Maintain and restore the forest hydraulic regime for each sub-basin within the range of natural variability.			
	4.1: Follow watershed analysis prescriptions. Maintain a minimum of (692) acres of hydrologically mature (> 40 years) forest in the Olsen Creek sub-basin. Maintain a minimum of (1,200) acres of hydrologically mature (> 40 years) forest in the Smith Creek sub-basin.	<u>Maintain at least 50% of each sub-basin (Watershed Analysis defined sub-basins) above 60 years of age</u>	<u>Maintain at least 70% of each sub-basin (Watershed Analysis defined sub-basins) above 60 years of age</u>	N/A
OBJECTIVE 5	Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.			
	5.1: Follow Forest Practice Rules and Forest Resource Plan Policy No. 33 (Controlling Competing Vegetation). Use the following prioritized application methods: 1) No treatment, 2) Non-chemical, 3) Ground-applied, and 4) Aerial-applied. Select a cost effective method by considering the no treatment method first and then move sequentially down the list.	No aerially-applied chemicals, chemicals include dust abatement, insecticides, pesticides, or fertilizers.	No chemicals, chemicals include dust abatement, insecticides, pesticides, or fertilizers.	
	5.2: Follow Forest Practice Rules and Forest Resource Plan Policy No. 34 (Thinning, Fertilizing, and Pruning). Use prioritized application method listed in Strategy 5.1.	No aerially-applied chemicals, chemicals include dust abatement, insecticides, pesticides, or fertilizers.	No chemicals, chemicals include dust abatement, insecticides, pesticides, or fertilizers.	

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OBJECTIVE 6	Maintain and restore a diversity of natural and managed functional habitat conditions to benefit native fish and wildlife species, particularly those identified in WDFW priority and habitat species (PHS).			
	6.1: Ensure all native fish species at all life stages have access throughout their natural range. 6.1.1 Identify, prioritize, and replace fish blockage culverts with fish passage structures. Replacement will occur with planned management activities or during implementation of the Road Maintenance & Abandonment Plan.	Complete 6.1.1 within 3 years after approval of landscape plan.	Complete 6.1.1 within 2 years after approval of landscape plan.	
	6.2: Retain riparian and wetland buffers and off-base unstable slope areas in older forest conditions.	Wildlife <u>140 year average rotation age</u>	Wildlife <u>200 year average rotation age</u>	Restoration thinning only (with the goal of accelerating the development of old forest conditions and/or important cultural vegetation).
	6.3: Protect all known bald eagle nesting, roosting and foraging sites. 6.3.1 Follow Forestry Handbook Procedure PR-14-004-330 for protecting bald eagle nest sites and roosts, including the development of site-management plans for bald eagle habitat pursuant to Forest Practices Regulations (WAC 232-12-292). 6.3.2 Follow the HCP riparian and large, structurally unique tree retention strategies, which should result in increased abundance of large trees for bald eagle nesting and roosting.	Inventory and protect all existing suitable habitat, for species that have guidelines according to the WDFW PHS Management Guidelines.		Restoration thinning only (with the goal of accelerating the development of old forest conditions and/or important cultural vegetation).

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	<p>6.4: Conduct Pacific Seabird Group (PSG) protocol surveys of all known reclassified marbled murrelet habitat to determine occupancy.</p> <p>6.4.1 Protect occupied stands and develop long term conservation strategy as required in the HCP.</p>	<p>Inventory and protect all existing suitable habitat, according to WDFW PHS Management Guidelines</p> <p>Where no guidelines exist consult with DNR region, tribal, and WDFW biologist.</p>	<p>Where no guidelines exist consult with DNR region, tribal, and WDFW biologist, and follow their concurred recommendations.</p>	<p>Restoration thinning only (with the goal of accelerating the development of old forest conditions and/or important cultural vegetation).</p>
	<p>6.5: Follow specific species-by-species Forestry Handbook procedures. The following unlisted species of concern have been identified in Table XX as existing in or near the Lake Whatcom landscape and have Forestry Handbook procedures in place. If current procedures do not exist, consult with Region Wildlife Biologist.</p> <p><u>Common Loon</u> – see Forestry Handbook Procedure PR 14-004-240: Protecting Common Loon Nests.</p> <p><u>Northern Goshawk</u> – see Forestry Handbook Procedure PR 14-004-260: Protecting Northern Goshawk Nests West of the Cascades.</p> <p><u>Pileated Woodpecker</u> – see Forestry Handbook Procedure PR 14-004-290: Protecting Pileated Woodpecker Nests.</p>	<p>Inventory and protect all existing suitable habitat, according to WDFW PHS Management Guidelines</p> <p>Where no guidelines exist consult with DNR region, tribal, and WDFW biologist.</p>	<p>Where no guidelines exist consult with DNR region, tribal, and WDFW biologist, and follow their concurred recommendations.</p>	<p>Restoration thinning only (with the goal of accelerating the development of old forest conditions and/or important cultural vegetation).</p> <p>N/A</p>

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	<p>6.6: Follow specific Forestry Handbook Procedures. The following uncommon habitats have procedures:</p> <p><u>Cliffs</u> – see Forestry Handbook Procedure PR 14-004-190: Protecting Cliffs.</p> <p><u>Talus Fields</u> – see Forestry Handbook Procedure PR 14-004-170: Protecting Talus Field.</p> <p><u>Caves</u> – see Forestry Handbook Procedure PR 14-004-180: Protecting Caves.</p> <p><u>Balds</u> – see Forestry Handbook Procedure PR 14-004-220: Protecting Balds.</p>	<p>Inventory and protect all existing suitable habitat, according to WDFW PHS Management Guidelines</p> <p>Where no guidelines exist consult with DNR region, tribal, and WDFW biologist</p> <p>6.7 For species and habitats listed in PHS and not identified above follow PHS Management Guidelines</p> <p>Where no guidelines exist consult with DNR region, tribal, and WDFW biologist</p> <p>6.8 Protect locally rare or uncommon native vegetative communities within the watershed that exhibit a combination of distinct age structure, species composition, structural diversity, or high wildlife value as identified in the assessment by consultation with DNR region, affected tribes, and WDFW, for instance the 100 year old big leaf maple stand.</p>	<p>Where no guidelines exist consult with DNR region, tribal, and WDFW biologist, and follow their concurred recommendations.</p> <p>6.7 For species and habitats listed in PHS and not identified above follow PHS Management Guidelines</p> <p>Where no guidelines exist consult with DNR region, tribal, and WDFW biologist, and follow their concurred recommendations.</p>	<p>Restoration thinning only (with the goal of accelerating the development of old forest conditions and/or important cultural vegetation).</p> <p>N/A</p> <p>N/A</p>
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OBJECTIVE 7	Permanently retain green trees, snags, & down logs to support mature forest functions.			
	<p>7.1: Implement the following snag and green tree retention procedures on all harvest units:</p> <p>7.1.1 Retain 7 percent of all trees that are 12" dbh or larger or 8 trees per acre, whichever is greater, as legacy trees</p> <p>7.1.2 Legacy trees shall be dominant and co-dominant trees</p> <p>7.1.3 Retain at least five windfirm green trees and three snags per acre harvested (subject to Dept. of Labor and Industries safety standards)</p> <p>7.1.4 Choose large trees with structural characteristics important to wildlife and old growth remnants</p> <p>7.1.5 One of these trees must be from the largest diameter class</p> <p>7.1.6 One additional tree must be from the dominant crown class</p> <p>7.1.7 Leave snags where safe and practicable, but at least three per acre on average must be left (15"dbh and 30' tall if available)</p> <p>7.1.8 If fewer than three snags per acre can be left, additional live trees will be retained so that the average per acre is 7 percent or 8 trees per acre, whichever is greater.</p>	<p><u>Permanently retain 25% of the trees in any harvest unit.</u> Emphasize retention of all existing snags (these count toward the 25%). Retain all existing down logs.</p>	<p><u>Permanently retain 40% of the trees in any harvest unit.</u> Emphasize retention of all existing snags (these count toward the 40%). Retain all existing down logs.</p>	N/A
OBJECTIVE 8	Maintain or increase soil productivity and health.			
	8.1: Implement strategies #7.1,12.1 and 12.2	Same as 1, with strategies from 2	Same as 1, with strategies from 3	Restoration thinning only (with the goal of accelerating the development of old forest conditions and/or important cultural vegetation).

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OBJECTIVE 9 Preserve, protect, and restore significant historic, archeological, traditional current use and cultural resources.				
	<p>9.1: Identify and protect cultural resources using the following DNR policies, procedures, and guidelines, as well as state and federal acts, rules, regulations, accords, agreements, and executive orders.</p> <p>Implement DNR Policy P006-001 <u>HISTORICAL, CULTURAL AND ARCHAEOLOGICAL SITES 7/31/96</u>: “All department personnel will identify potential archaeological, historic and cultural sites/resources in the course of their normal duties. Discovered resources will be recorded and inventoried in coordination with the Office of Archaeological and Historic Preservation (OHAP) and/or the appropriate Tribes so that they can be protected to the full extent allowable by law.</p> <p>“It is the policy of the department that Forest Resource Plan Policy #24 “Identifying Historic Sites,” shall apply to all department managed lands. That policy states “The department will establish a program to identify and inventory historic and archaeological sites and protect them at a level, which, at a minimum, meets regulatory requirements...”</p> <p><u>DNR Tribal Policy PO06-002, Jan. 16, 1991</u> as referenced in <u>Appendix F of the 1991 Forest Resource Plan</u>, in PO06-001, and as reflected in the <u>Revised DNR Tribal Policy</u>, June 1998.</p>	<p>Lummi Nation Code of Laws Title 40 Cultural Resources Preservation Code; Lummi Resolutions 92-124 & 125</p>		

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	<p>1992 DNR Forest Resource Plan: Policy #8 <u>Special Forest Products</u>; Policy #13 <u>Special Ecological Features</u>; Policy #16 <u>Landscape Planning</u>; Policy #19 <u>Watershed Analysis</u>; Implement Policy #24: HISTORIC AND ARCHAEOLOGICAL SITES: The department will establish a program to identify and inventory historic and archaeological sites and protect them at a level which, at a minimum, meets regulatory requirements.</p> <p>Policy #28 <u>Developing and Maintaining Roads</u>; Policy #35 <u>Implementation Policies: Public Involvement</u>: “The department will solicit comment from the public, tribes, and government agencies when implementing the Forest Resource Plan and when revising policies contained in the document.”</p> <p>DNR Forestry Handbook Procedures: PR 14-004-030 <u>IDENTIFYING HISTORIC SITES</u>; PR 14-004-010 <u>IDENTIFYING OFF-BASE LAND</u>; PR 14-004-110 <u>WETLAND MANAGEMENT</u>.</p> <p>DNR 1997 HCP and DNR HCP FEIS, October 1996, p. 3-121.</p>			
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	<p><u>Washington State Rules, Regulations, Agreements:</u> RCW 27.34 <u>Archaeological and Historic Preservation</u>; RCW 27.44 <u>Indian Graves and Records</u>; RCW 27.53 <u>Archaeological Sites and Resources Act</u>; RCW 43.21C.020 & WAC 197-11 <u>State Environmental Policy Act</u>; RCW 25 <u>Office of Archaeology and Historic Preservation</u>; RCW 76.09 <u>Forest Practices Act</u>; WAC 222 <u>Forest Practices Rules</u>; <u>1999 Forest & Fish Plan</u> Appendices G: Cultural Resource Module, N2: DNR Cultural Resources Planning, O: Cultural Resources Management & Protection Plan; <u>1987 TFW Agreement</u>; <u>1989 Centennial Accord</u>; State SHB 1189.</p> <p><u>Federal Regulations/Laws/Executive Orders:</u> 36 CFR Part 800 <u>Protection of Historic Properties</u>; 42 U.S.C. <u>AIRFA American Indian Religious Freedom Act</u>; 33 U.S.C <u>Clean Water Act</u>; 16 USC <u>Endangered Species Act</u>; Title 16 U.S.C 1906 <u>Antiquities Act</u>; Title 16 U.S.C., PL 96-95 <u>Archaeological Resources Protection Act of 1979</u>; PL 101-601 <u>Native American Graves Protection and Repatriation Act</u>; PL 91-190 <u>National Environmental Policy Act</u>; 1971 Executive Order #11593 <u>Protection and Enhancement of the Cultural Environment</u>.</p>			
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	<p>9.2: Use the DNR Total Resource Application Cross-Reference (TRAX) database system prior to planning resource management activities to identify known sites.</p> <p>Use the DNR Planning and Tracking (P&T) System to identify Cultural Resources Site PER DNR PR 14-004-030 IDENTIFYING HISTORIC SITES</p>	<p>DNR and the affected Tribes will develop a Cultural Resource Management Plan (CRMP), in consultation with the Office of Archaeology and Historic Preservation, that implements the Protection Needs and Comments/Recommendations columns in the Cultural Resource Matrix (Table5), the 1987 Timber, Fish, and Wildlife Agreement on Archaeological and Cultural Resources, and DNR policy P006-001. The CRMP will be completed and implemented within 1-year following adoption of the landscape plan.</p>		
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	9.3: When management activities involve or affect cultural resources, DNR will meet with the affected tribe(s) with the objective of agreeing to a plan for protecting the archeological or cultural value. (per WAC 222-20-120)	DNR and the affected Tribes will develop a Cultural Resource Management Plan (CRMP), in consultation with the Office of Archaeology and Historic Preservation, that implements the Protection Needs and Comments/Recommendations columns in the Cultural Resource Matrix (Table5), the 1987 Timber, Fish, and Wildlife Agreement on Archaeological and Cultural Resources, and DNR policy P006-001. The CRMP will be completed and implemented within 1-year following adoption of the landscape plan.		
	9.4: DNR will meet regularly with the affected tribe(s) to discuss plans or management activities. (per PO06-002 Tribal Relations Policy, January 16, 1991 and June 2, 1998)	Prior to implementation of the completed CRMP, DNR will consult with affected Tribes during timber harvest planning, as specified in a MOU, MOA, or other formalized agreement signed by DNR and the affected Tribes prior to adoption of the landscape plan. Protection of Traditional Cultural Properties identified during timber harvest planning will follow the Protection Needs and Comments/Recommendations columns in the Cultural Resource Matrix (Table5).		

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OBJECTIVE 10	Provide and facilitate tribal access to state managed lands for traditional cultural and religious practices and treaty guaranteed hunting and gathering.			
	10.1: Tribal use is provided for by Policy No. P010-002 (Public Use on DNR-Managed Trust Lands), provided resources and assets are not at risk. Tribal Access for hunting, fishing and gathering per Point Elliott Treaty of 1855 Section 5 Open and unclaimed lands.	a) Prior to implementation of the landscape plan, develop a Memorandum of Understanding (MOU) with affected Tribes regarding physical access for tribal members to state managed lands for traditional cultural and religious practices, and tribal ceremonial gathering and hunting. b) Include Tribes in pre- and post-harvest planning, provide information sharing and access to do traditional practices. c) Consult with Tribal staff during the development of the Lake Whatcom road maintenance and abandonment plan.		
OBJECTIVE 11	Create and implement a sustained yield model specific to the Lake Whatcom watershed that encompasses the revised management standards and that is consistent with the sustained yield established by the Board of Natural Resources.			
	11.1: The average rotation age is consistent with forest resource plan policy as specified by site and species – generally averaging 60 years.	Average 140 year rotation	Average 200 year rotation	N/A
	11.2: Harvest trees in dense stands commercial thinning), before trees die from stand competition, to capture revenue that would otherwise be lost.			N/A
OBJECTIVE 12	Maintain or improve commercial forest productivity and health.			
	12.1: Select a harvest method that maintains or facilitates establishment of productive and healthy forest stands.			Restoration thinning only (with the goal of accelerating the development of old forest conditions and/or important cultural vegetation).

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	12.2: Avoid using ground based harvesting systems on slopes exceeding 30% and on soils sensitive to compaction.			
	12.3: Following regeneration harvests, reforest with a majority of Douglas-fir intermixed with Western red cedar at all elevations in the planning area.	Same as A, plus use natural regeneration where appropriate.	Same as A, plus use natural regeneration where appropriate.	N/A
	12.4: Pre-commercially thin overstocked stands.			
	12.5: During the first two decades of the plan, accelerate the harvest of mature and overmature hardwood stands on sites better suited for conifers.			N/A
	12.6: Control competing vegetation that would dominate crop trees or significantly inhibit growth in a stand.			N/A
OBJECTIVE 13	Cultivate higher value commercial forest products.			
	13.1: Plant and encourage growth of western red cedar to develop pole products.			N/A
	13.2: Prune, to increase wood quality, where it will generate a higher economic return.			N/A
	13.3: Consider tree selection during commercial thinning that promotes future log quality.			N/A
OBJECTIVE 14	Develop and maintain a transportation network that facilitates commercial management activities.			
	14.1: Develop and begin implementation of a Road Maintenance and Abandonment Plan within one year of the completion and approval of the landscape plan.			
	14.2: Use harvest system planning to reduce total length of road constructed.			No new roads.
	14.3: Abandon roads to Forest Practices standards when they are no longer needed for management.			

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	14.4: Install and maintain gates where necessary to reduce road maintenance costs, resource impacts, vandalism, and garbage dumping.			
OBJECTIVE 15	Maintain and increase lease revenue from existing and future communication sites.			
	15.1: Continue to lease tower and building space to interested parties.			
	15.2: When possible, review rental rates. Increase rates if market conditions allow.			
	15.3: Seek new communication site customers.			Seek new customers for existing communication sites only.
OBJECTIVE 16	Consider opportunities to generate revenue from oil and gas exploration.			
	16.1: Limit exploratory drill sites to surface locations outside the watershed. Subsurface diagonal drilling allowed. 16.2: If sufficient oil or gas reserves are found, allow development of the resource if compatible with other landscape objectives.	No surface drilling in watershed.	No surface or exploratory drilling or seismic work in watershed.	
OBJECTIVE 17	Consider the marketing of special forest products such as evergreen boughs, salal greens, moss, and native plants, as appropriate.			
	17.1: Ensure potential products, if sold, will not negatively impact other resource objectives or traditional tribal use.			N/A
OBJECTIVE 18	Consider other revenue generating mechanisms.			
		Carbon sequestration		
	Green certification			
		Recreational fees		
	Carbon sequestration Lease Conservation easement Reconveyance Exchange or sell trust lands	Carbon sequestration Lease Conservation easement Reconveyance Exchange or sell trust lands consistent with the respective alternative.		

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OBJECTIVE 19	Manage dispersed, low impact recreation.			
	19.1: Public use and recreation is allowed in accordance with Policy No. PO10-002 (Public Use on DNR-Managed Trust Lands), provided resources and assets are not at risk.	Consult with tribal staff to ensure that the DNR’s public use policy is consistent with Objectives 9 and 10.		
	19.2: As budget allows, develop a comprehensive recreation plan in cooperation with specific user groups such as the horseback riders, mountain bikers, hikers and other interested parties that minimizes impacts to trust resources and assets.			
	19.3: Limit access to streams, riparian areas, and wetlands by motorized vehicles through permanent road closures, vehicle barriers, and public education and enforcement.			Pedestrian access only.
OBJECTIVE 20	Reduce the visual impact of forest management activities in high visibility areas as shown on Map S-1.			
	Strategy 20.1: Follow Forest Practice Regulations and Forest Resource Policy No. 32 (Green-up of Harvest Units), in conjunction with Policy No. 16 (Landscape Planning). The following guidelines will be used for even aged harvest units: <ul style="list-style-type: none">• Harvest units will not exceed 100 acres except in the case of emergency salvage operations due to extensive "blowdown", insect or disease infestation, or public safety concern.• No harvesting within 300 ft of another harvest area if combined acreage of harvest areas exceeds 100 acres Harvest units with trees greater than 4 ft high are considered “greened-up.”			N/A

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	20.2: In highly visible areas the department will consider the size, shape, and location of harvest units and distribution of leave trees when planning timber sales.			N/A
OBJECTIVE 21	Support stewardship education opportunities and partnerships that address community needs.			
	21.1: Cooperate and provide educational opportunities from requesting educational institutions and other interested parties consistent with the department’s public use policy No. PO10–002.			
	21.2: DNR will continue to be an active participant in the Forest Practices Timber Fish Wildlife (TFW) process and the Lake Whatcom Forestry Forum.			

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